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EVALUATION OF STPA AND FUTURE WORK PROGRAMME

Table of contents

		Paragraphs
I.	Introduction	1-7
II.	Objectives of STPA	8-15
III.	Evaluation of the performance of the STPA centres	16-29
IV.	Justifications of the results achieved and follow-up action	30-40
V.	Evaluation of the activities undertaken within the framework of STPA	41-78
VI.	Conclusion on future work programme	79-87

I. INTRODUCTION

1. It should be recalled that the Statistical Training Programme for Africa (STPA) was adopted by the Tenth Session of the Conference of African Statisticians held in 1977 and was formally instituted by Resolution 9 ECO (XVIII) of the Eighteenth Session of the ECA Executive Committee held at Khartoum (Sudan) in 1978.

2. The establishment of this programme was chiefly motivated by the fact that the situation of most of the national African Statistics Departments as far as their staff were concerned still left much to be desired although the statistical training programme launched after 1960 adequately covered the objectives. In fact, the departments had gradually lost many qualified staff who drifted to other departments of the state, parastatal and private sectors and even to other more developed countries.

3. Another reason that motivated the establishment of STPA was the under-utilisation of the existing training facilities due to lack of information on the courses offered, the conditions for admission and available finances.

4. Finally, the last reason was that most of the training courses, particularly those offered by universities, tend to be too academic.

5. For all these reasons, the ninth session of the Conference of African Statisticians held in Lome, Togo, in 1975 insisted on the establishment of a long-term programme for the training of African statisticians and the scrutiny of all financing possibilities so as to ensure the continuity of the programme. As recommended by the Conference, a working group met in August 1977 to consider Africa's statistical training needs. Special attention was given to the following matters:

(a) improvement of the existing training centres and how these centres could as far as possible be effectively utilised, whether they are regional or national, and the practical re-orientation of their teaching programmes;

(b) reduction in the loss of qualified staff working in the national statistics departments;

(c) financial resources required; and

(d) co-ordination of the statistical training activities in and outside the region.

6. The present evaluation of the STPA was requested at the third meeting of the Directors of the centres participating in the programme, held in Addis Ababa in November, 1983. The need to compare the results so far achieved with the initial objectives of the programme was emphasized. Here it is a question of conducting an internal evaluation of the STPA programme as a whole and not only the regional component of the programme financed by the United Nations Development Programme (UNDP).

7. The present evaluation covers the following topics:

- Objectives of the STPA at the time it was established;
- Evaluation of the performance of the STPA centres;
- Justifications of the results achieved and follow-up action to be taken;
- Evaluation of the activities undertaken within the framework of the programme;
- Conclusions and future work programme.

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II. OBJECTIVES OF STPA

8. The main objective of the STPA is to ensure that the African region has permanent supply of qualified statistical staff for the statistics departments and other State departments as well as for the private sector. It is therefore necessary to take into consideration each country's global needs in statistical staff and to ensure that the private and the public sectors have a reasonable share of the trained personnel.

9. Transfers to other posts of the public or private sectors within the same country do not constitute a loss for this country, nevertheless efforts should be made to equip statistics departments with sufficient number of specialists so that they can discharge their duties of collecting, processing and analysing the data required for economic and social development.

10. To enable STPA attain its objective, it was originally concerned as a ten-year programme aiming at ensuring Africa's self sufficiency by:

- increasing the number of trained statisticians;
- improving and maintaining the quality of the serving statistical staff.

11. It was thought that during the period 1978-87 (and probably on a permanent basis thereafter), it should be necessary that the STPA centres increase their output almost by half. The most important part of the increase concerned professional training courses in the English-speaking countries. However, it should also be necessary to take steps to increase the facilities for the training of statistician-economists (ISE) for the French-speaking countries and implement a special project for the Portuguese-speaking African countries.

12. To this end, assistance should be given to the centres participating in the programme so as to:

- improve their efficiency and output;
- re-orient their teaching programmes with a view to making them more practical while at the same time maintaining a good training level; and
- ensure that they become self-sufficient.

13. It was decided that STPA would offer training in the following areas:

(a) Professional training

This involves a general basic university training leading to one of the following degrees: "ingénieur des travaux statistiques (ITS), ingénieur d'application de la statistique (IAS), First degree in Statistics (B.A., B.Sc., B.Stat.) or equivalent qualifications. Top priority was given to this area of training.

(b) Specialized training and post-graduate studies

The aim here is to intensify training at the post-graduate level as to make the region less dependent on foreign institutions and personnel. Three areas of training fall within this category:

- long period of studies leading to one of the following degrees: statistician-economist degree, Masters or Doctorate in statistics or equivalent qualifications;

- specialization particularly in the following fields: national accounting, agricultural statistics, sample surveys, demographic statistics, manpower and employment statistics and electronic data processing;

- short-term courses and seminars organized by centres in the region or offered by external institutions for working statisticians.

(c) Training of middle level statisticians

It was proposed that at this level, training should normally be done at the level of the countries. As and when the professional statisticians become many, this form of training should be integrated into the programme of the national statistics departments. However, the existing regional training facilities should be maintained, even strengthened if need be. Studies in this category would lead to either "diplome d'adjoint technique de la statistique", or diploma in statistics (intermediate level) or "diplome d'agent technique de la statistique", or certificate in statistics (middle level).

14. Besides, it was proposed that STPA should serve as the framework for the co-ordination of the establishment, improvement and, if need be, the expansion of the training facilities in Africa. Its work programme should cover the following areas:

(i) dissemination of information on training activities;

(ii) maintenance of equivalence of curricula and qualifications;

(iii) review and re-orientation of the study programmes to ensure a more practical training and supplement the general training courses through the provision of specialized training;

(iv) development of additional projects and expansion of existing projects for professional training, including post-graduate training;

(v) specialized training: centres participating in STPA should be encouraged to make provisions for specialization; specialized training courses organized by centres outside the region (such as the Munich Centre for Advanced Training in Applied Statistics) should be considered as forming an integral part of STPA;

(vi) assistance to countries desiring to draw up middle level in-service training programmes, especially drawing up of projects, course content or provision of documentation for the courses;

(vii) organization of short-term courses and seminars for working statisticians;

(viii) training of trainers;

(ix) teaching of statistics in secondary schools;

(x) periodical critical analysis and evaluation of STPA;

(xi) effective co-ordination of the activities of STPA by ECA, especially, through the biennal meeting of the Directors of the training centres in and outside the region and the Joint Conference of African Planners, Statisticians and Demographers.

15. Fifteen regional or national centres offering regional services currently participate in the programme. Besides, five institutions situated outside Africa are associate members of STPA. The list of these centres and institutions are attached hereto as annex I. It should be noted that at its inception, STPA had twelve members and only one associate member.

III. EVALUATION OF THE PERFORMANCE OF THE STPA CENTRES

16. The number of professional statisticians working in 1977 was estimated at 1482. Therefore 5,045 more should be trained during the period between 1978 and 1987. Similarly, according to the estimates, the number of the middle level statisticians stood at 2,979. Therefore, 6,482 more should be trained during the same period.

17. Table I shows the development of the situation concerning the actual number of statistical staff at post between 1977 and 1982 in respect of 33 African countries.

Table I. Comparison of the number of statistical staff in post in 1977 and 1982

Field of study and category of statistical staff	Statistical staff in post			Estimated needs 1978-82	Percentage of needs met
	1977	1982	Increase		
English-speaking African countries (18 countries)1/					
- Professional categories	611	1,301	690	1,146	60
- Middle level categories	1,280	2,455	1,175	1,698	69
French-speaking African countries (15 countries)2/					
- Professional categories	467	841	374	485	77
- Middle level categories	576	967	391	620	63
All the 33 countries surveyed					
- Professional categories	1,078	2,142	1,064	1,631	65
- Middle level categories	1,856	3,422	1,566	2,318	68

18. By way of simplifying the calculations, a hypothesis was established according to which the estimated needs for the 1978-1982 period (five years) represented half the estimated needs for the period 1978-1987 (ten years).

1/ Botswana, Ethiopia, Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mauritius, Nigeria, Uganda, Seychelles, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania and Zambia.

2/ Benin, Burundi, Cameroon, Central African Republic, Congo, Ivory Coast, Gabon, Madagascar, Mali, Mauritania, Niger, Rwanda, Senegal, Togo and Zaire.

19. It is evident from Table I that the increase in the number of statistical staff for the 33 countries surveyed, during the 1977-1982 period, represent 65 per cent of their needs in professional statisticians and 68 per cent their needs in middle level statisticians. At the 77 per cent and 69 per cent increase respectively, the needs for professional statistical staff seem to be better covered in the French-speaking countries than in the English-speaking countries. However, the opposite is the case with regard to the needs for middle level staff with 63% and 69%, respectively. It may be concluded that this increase in the number of staff was due especially to the recruitment of new qualified staff by STPA centres. However, the figure includes also statisticians trained by other centres, national or foreign, and recruited by national statistics departments, other State departments or the private sector. The table also shows, however, in a smaller proportion, staff who had no training in statistics but were recruited by statistics departments of the region.

20. Table 2 shows the proportion of statisticians working in the different sectors for the 33 countries surveyed, according to 1977 and 1982 surveys:

Table 2: Distribution of statisticians among the different sectors in 1977 and 1982

	in%					
	1977 Survey			1982 Survey		
	NSD[1/]	Other State Depts	Private & other sectors	NSD[1/]	Other State Depts	Private & other sectors
English-speaking African countries (18 countries)						
- Professional categories	62	22	16	44	26	30
- Middle level categories	67	19	14	57	27	16
French-speaking African countries (15 countries)						
- Professional categories	44	23	33	51	28	21
- Middle level categories	56	26	18	54	33	13
All the 33 countries						
- Professional categories	54	22	24	47	27	26
- Middle level categories	64	21	15	56	29	15

1/ NSD: National Statistics Departments.

21. The main shortcomings of Tables 1 and 2 rest probably in the lack of information regarding statisticians working in other State departments or especially in the private sector. Several figures on these two sectors are estimates prepared from inadequate information collected in the countries visited or from other sources.

22. However, the following conclusions may be drawn from Table 2 as far as the 1977-1982 period is concerned:

(i) A large number of professional statisticians have apparently joined other State departments or especially the private sector in the English-speaking African countries, to the detriment of the national statistics departments;

(ii) The situation of the national statistics departments and other State departments as far as the professional level statistical staff are concerned seems to be better strengthened in the French-speaking African countries, but this time, to the detriment of the private sectors;

(iii) A large number of the middle level category statisticians work in the other State departments to the detriment especially of the national statistics departments in the case of the English-speaking countries and of the private sector in the case of the French-speaking countries.

23. Attempts will be made to evaluate the performance of the STPA centres to find out if the conclusions drawn from Table 1 are valid.

24. The secretariat has received from the centres participating in the STPA, figures on their outputs between 1978 and 1984, a period of 7 years, for each level of training. Besides, Tables 2 and 3 attached to the original STPA document (E/CN.14/ECO/132) relating to the requirements and offers, give the figures according to each country and centre for the 1978-87 period. Supposing that the estimated requirements are evenly distributed each year, the requirements for the 1978-84 period represent 7/10 of those estimated for 1978-87 period. The comparison of the two figures concerning the outputs on the one hand and the requirements and the offers on the other, for the 1978-84 period is contained in Table 3.

Table 3: Comparison of needs to be met and outputs of STPA centres - 1978-84

Language groups and categories of statistical staff	Needs to be met by STPA centres	Outputs of STPA centres, 1978-84	Percentage of needs met
English-speaking centres			
- Professional categories	1,431	951	66
- Middle level categories	930	780	83
French-speaking centres			
- Professional categories	1,505	1,843	122
- Professional categories (excluding INSEA Rabat)	966	930	96
- Middle level categories	1,232	813	66
All STPA centres			
- Professional categories	2,936	2,794	95
- Professional categories (excluding INSEA Rabat)	2,397	1,881	78
- Middle level categories	2,170	1,593	73

25. In order to better interpret the figures on Table 3, it is necessary to explain that the number of statisticians of middle level categories to be trained by the centres participating in the STPA is only 2,170 because 2,369 statisticians of this level are supposed to have been trained by other centres, particularly national centres or as part of the implementation of a special project for the Portuguese-speaking African countries. Besides, the Rabat centre in Morocco, whose case has been treated separately, has alone more than half the number of professional statisticians trained by French-speaking centres during the 1978-84 period.

26. It follows from Table 3 that the percentage of the needs satisfied in the case of professional statisticians is more for the STPA French-speaking centres than for the STPA English-speaking centres, with 96 per cent for the former (excluding the Rabat centre in Morocco) as against 66 per cent only for the latter. This confirms the observation made in Table 1. The opposite is the case of middle level statisticians when one comes to note that the percentage of the needs satisfied in the French-speaking countries is 66 per cent and 83 per cent in the English-speaking countries.

27. Table 4 also makes it possible to compare, by using another method, the performance of the STPA centres with the original objectives for the period 1978-84. The figures will be given showing increases, expressed in percentage, in relation to the estimates obtained for the period under review while keeping the rate of training staff in 1978 when the STPA was established.

Table 4: Comparison of increase expressed in percentages, in the outputs and the requirements in relation to the initial situation, for the period 1978-84

STPA centres and categories of statistical staff	Increase in the needs in relation to the initial situation, expressed in percentage	Increase in the outputs in relation to the initial situation, expressed in percentage
STPA English-speaking centres		
- Professional categories	69	12
- Middle level categories	72	43
STPA French-speaking centres		
- Professional categories	37	68
- Professional categories excluding the Rabat centre	22	18
- Middle level categories	44	-5
All STPA centres		
- Professional categories	51	44
- Professional categories excluding the Rabat centre	46	15
- Middle level categories	55	14

28. The figures contained in Table 4 confirm the fact that the STPA English-speaking centres are still quite far from attaining the objectives set for the training of the professional statisticians. It is true that, as indicated earlier, the greater part of the expected increase of the numbers concern the training of professional statistical staff in the English-speaking countries. Similarly, the figures relating to the STPA French-speaking centres show that the contract has not been fulfilled with regard to the training of middle level staff for the French-speaking countries. Nevertheless, it should be stated that originally, it was planned to open a middle level training section at the Kigali IAMSEA. However, this section was opened only in October 1983 as a national training branch and not as a regional training unit. By removing this centre from the table relating to the requirements and offers for the middle level staff, the increase of the needs to be satisfied in this area by the STPA French-speaking centres in relation to the initial situation would be 13 per cent instead of 44 per cent.

29. The conclusions of the Joint EEC/ACP/ECA study referred to earlier, showed that the Africa region's needs in statistical staff have gone up significantly in relation to the estimates prepared at the inception of STPA. This increase concerns particularly professional staff for English-speaking countries and the middle level category for both groups of countries. It is therefore necessary to take appropriate steps within the framework of STPA to satisfy the growing needs of the region in all categories of statistical staff.

IV. JUSTIFICATIONS OF THE RESULTS ACHIEVED AND FOLLOW-UP ACTION

30. Several problems account for the relatively unsatisfactory results achieved by the STPA centres.

31. First, it should be pointed out that fellowships continue to constitute one of the major obstacles to the development of the programme. This issue has been discussed many times by the meeting of Directors of the Centres participating in the STPA and the Joint Conference of African Planners, Statisticians and Demographers. Negotiations were undertaken with the Commission of European Communities on the financing of these fellowships from the regional funds of the European Development Fund (EDF) pursuant to a Resolution of the ECA Conference of Ministers. After a glimpse of hope at the beginning, negotiations on this request fell through. Indeed, the E.D.F., like the other bilateral and multilateral donor agencies, confirmed that fellowships for the STPA centres should form part of each country's programmes. The general feeling of the donors is that there are sufficient fellowships in these programmes but that the countries do not utilise them fully.

32. The recommendation of the recent session of the Conference of African Planners, Statisticians and Demographers held in Addis Ababa in March 1984, constituted a reasonable and a realistic basis for solving this problem. In fact, the Conference was of the view that African Governments should ensure that an adequate number of fellowships were earmarked for statistical training, either from national resources or from the funds provided by bilateral or multilateral donors. It also requested the donor agencies to facilitate and accelerate as much as possible the process of granting fellowships. The Conference further recommended that Directors of Statistical training centres communicate early to the countries, the list of the candidates admitted into their centres to enable the countries start in time the formalities for applying for fellowships from the funding agencies.

33. Another problem relates to the limited number of places offered in many STPA centres. In fact, some of these centres have operated for several years in temporary premises. The problem is happily being resolved with the recent completion of the new premises for IAMSEA in Kigali and the new buildings being built at ENSEA in Abidjan. It is also expected that the construction of the new premises at the EASTC in Dar-es-Salaam will start as early as possible, for this project has been in the pipeline for several years already. All the parties involved should accelerate the process for the realisation of this project. It is hoped that other STPA centres will also be planning to make extensions to their present premises or to construct new ones. The INSEA in Rabat has set an example in this area, for the suitability of the present premises has enabled the centre to increase its output beyond all expectations.

34. Besides, it is noted that some countries find it difficult to have successful candidates in the competitive examinations or candidates who have passed after training. Some STPA centres have, in collaboration with national statistics departments, already started organising correspondence courses to prepare candidates for competitive examinations or future studies, particularly in mathematics. These efforts should be pursued and intensified to enable all countries of the region have an adequate number of statistical staff in all the required categories.

35. The relatively unsatisfactory results achieved by the English-speaking STPA centres in the field of training of professional staff is explained by the fact that several universities run courses in statistics either as a single subject or as part of a more general course. Apart from the six STPA centres concerned, there are statistics departments in the universities of other five countries and the establishment of such a department is also envisaged in the near future in other three countries. Owing to the existence of these national structures, the STPA English-speaking centres have in general trained a lot more of the nationals of the countries where these are established than the other countries. It is therefore necessary to take into consideration, for the future, these national structures for meeting the professional statistical staff needs of the English-speaking African countries. Actions should also be taken to make the courses given in these national centres more practically oriented.

36. The needs for the training of the professional statistical staff in the STPA French-speaking centres have not been met, especially the training of statistician economists (ISE), because the courses for this category of staff did not start in Africa during the period under review. However, it should be pointed that the Abidjan centre proposes establishing a section for this type of training as soon as the present construction of its permanent premises is completed. The Yaounde centre also intends opening a section for this type of training when conditions permit. These projects should be encouraged within the framework of the STPA. At the moment, the CESD of Paris intends assisting the two centres in Abidjan and Yaounde in the technical preparation of what is commonly known as "the transfer of CESD to Africa". In this regard, financial support is being expected within the framework of the assistance project of the European Economic Community (EEC) to STPA.

37. Given the importance of the demand for the middle level statisticians, several countries have already established national facilities for the training of this category of staff. Eleven English-speaking countries have already started such courses and three others are planning to follow suit. Apart from the STPA centres, the establishment of such national facilities has only quite recently begun in the French-speaking countries. In this connection, mention should be made of Benin, Congo, Niger, Central African Republic and Rwanda. Similar projects are also being drawn up in Gabon and Madagascar.

38. Ultimately, most of the STPA centres offering middle level training courses will essentially be utilised by candidates from countries where these centres are located. Admission of foreign students will be limited to nationals of small countries in which running of corresponding local training courses are not justifiable. However, the EASTC, Dar-es-Salaam which is a regional centre should continue to offer middle level statistical staff training to the main countries utilising it.

39. With the establishment of national facilities for the training of middle level category statistical staff, it would be necessary to harmonise the programme and the recruitment conditions to some extent. The assistance of the STPA centres will be decisive in this regard, especially for the training at the "Adjoint technique" or diploma level.

40. As regards the Portuguese-speaking African countries, it should be pointed out that a project document has recently been prepared by Mozambique with the help of ECA, for the establishment of a unit for the training of the middle level categories of statistical staff, attached to the National Department of Statistics. This project document will be submitted to the donor agencies interested in financing it. A consultant has also been recruited for 6 months within the framework of STPA to assist the launching of the in-service statistical training programme in Guinea Bissau and Sao Tome and Principe. With regard to the project for special assistance to Portuguese-speaking African countries, it should be recalled that the third session of the Joint Conference of African Planners, Statisticians and Demographers noted with satisfaction the new realistic approach given to this project by placing emphasis on training at national level. It was suggested that STPA's action be pursued in that manner.

V. EVALUATION OF THE ACTIVITIES UNDERTAKEN WITHIN THE FRAMEWORK OF STPA

41. To facilitate this evaluation, reference will be made to the work programme proposed for STPA at the time it was created which is also reproduced in section II above dealing with the objectives.

(i) Dissemination of information on training activities

42. This question will be discussed in more detail under the agenda item 10 of the fourth meeting of the Directors of Centres participating in the STPA. However, it can be said that the main channels for disseminating information on statistical training activities within the framework of the STPA are:

- "STPA News": The STPA News is published twice a year. It gives account of the STPA activities in general. So far, nine issues have come out. The frequency of the publication of the STPA News has been maintained in recent years after some initial material difficulties had been overcome.

- Directory of STPA and associate centres: This publication which comes out every two years, provides detailed information on the activities of STPA and associate centres. In fact, the associate centres were only included in the directory beginning with the 1985 edition, upon request from the last meeting of the Directors of the Centres participating in the STPA. So far, four editions of the Directory have been published and distributed.

- Directory of non-STPA centres: This document gives information on the activities of national statistical training centres in Africa which do not participate in the STPA. It is felt that these centres, although non-members of the STPA, make vital contributions to the training of statistical staff needed by Africa. It should be explained that membership of the STPA implies *inter alia* that a centre be regional, *de jure* or *de facto*, that is to say, offering services to other countries of the region. In that connection, the centre may be granted assistance from the regional funds of donor agencies. On the other hand, purely national centres can only be given assistance bilaterally. This was the first time the publication of a directory of non-STPA centres had been undertaken. This directory should henceforth form part of the STPA regular publications.

- Six-monthly progress report on STPA activities: This report is prepared in June and December each year at the request of UNDP which finances the regional component of the STPA based in ECA. This document is distributed to all countries of the region for comments and suggestions.

43. Efforts should be made to keep up these publications. To this end, the secretariat should take every necessary step to overcome the problems of translation and printing of these publications. Besides, STPA and associate centres as well as the non-STPA centres should send systematically to the secretariat information concerning their activities and react diligently to the requests for specific information made to them.

(ii) Maintenance of equivalence of curricula and qualifications, review and reorientation of course programmes

44. The maintenance of equivalence of curricula and qualifications is not only useful, but also necessary. In fact, candidates holding qualifications from a centre may be made to pursue courses in another centre. Besides maintenance and some harmonisation of the programmes and recruitment conditions, facilitates the recognition of degrees awarded by the different centres by civil services of the countries concerned.

45. The STPA French-speaking centres have for their part set up, several years ago, common competitive examinations for admission to courses in statistics with the help of CESD. There are also bases for effective co-ordination at the level of the middle level category of staff for which common competitive examinations are now being organised in many French-speaking countries of the region either by ISPEA of Yaounde or ENSEA of Abidjan.

46. Such common competitive examinations do not exist in the English-speaking STPA centres. Conditions for admission and the duration of courses are at times different. For instance, for the B.Sc. programme, the Department of Statistics of the University of Ibadan insists that candidates possess passes in mathematics and at least in one other discipline (on the approved list of the University) at G.C.E. advanced level or be holders of a professional diploma in statistics and fulfil the minimum entry requirement for preliminary courses at the University of Ibadan. The duration of the course is 3 years. For the same programme, the Department of Statistics of the National University of Lesotho insists on Cambridge Overseas School Certificate (COSC) or GCE ordinary level under certain conditions. The duration of the courses is four years. Despite these differences in the conditions of admission and duration of courses, steps should be taken to ensure that diplomas issued are of almost comparable level. This problem can be partly resolved through the harmonisation of teaching programmes. It was also proposed with regard to the middle level staff that an equivalence be established between the diplomas delivered by STPA centres and the training given and certificates awarded by the Institute of Statisticians, United Kingdom.

47. As for the review and re-orientation of the course programmes, it should be pointed out that the following guide syllabuses have been drawn up by ECA within the framework of STPA activities:

- Separate guide syllabuses for the training of the middle level statistical staff for the French-speaking centres and the English-speaking centres (published in 1982);

- Guide syllabus for the in-service statistical training (preliminary level, first and second stages), 1983;

- Guide syllabus for the in-service statistical training for Portuguese-speaking African countries (Portuguese language), 1984.

48. Besides, separate guide syllabuses for professional statistical training are being drawn up for the French-speaking centres and the English-speaking centres. The first draft has already been sent to all National Statistics Departments in the region and all STPA centres for comments and suggestions. It was also planned that the two groups of consultants in charge of preparing these guide syllabuses meet in August, 1985 to try to bridge the gap between the French and English training systems and to review these documents in the light of comments received.

49. During the preparation of these different guide syllabuses, special emphasis was laid on the practical re-orientation of courses. Besides, applied statistics occupied an important place in these syllabuses. It is necessary for the future to review periodically these guide syllabuses in line with the new developments in statistical techniques and the needs of the countries of the region.

(iii) Development of high level training, including post-graduate training and specialisation

50. Two STPA French-speaking centres including CESD of Paris and INSEA of Rabat have so far provided training for statistician-economists (ISE). Since the beginning of the 1984/85 academic year, the INPS of Algiers has opened a "cycle des ingénieurs d'Etat" which corresponds to ISE level and a "cycle des magisters (post-graduate course). Options have been given to the final year students. In the case of CESD, each student opts for a certain number of subjects selected from the following: Mathematics or theory of statistics, economics, practical statistics and business economics. In the case of Rabat centre, the students select either statistics or economics. A third option which concerns demography, is also being considered. There is provision for specialisation in the case of each options (economic analysis, planning, sampling, etc...). The Algiers centre has two branches for the "Cycle des ingénieurs d'Etat" (statistics and planning) and two branches also for the "Cycle des magisters" planning and quantitative techniques. As indicated earlier, there are plans for the opening of a section for the ISE training at the Abidjan and Yaounde centres. An STPA centre, IFORD of Yaounde, provides post-graduate specialised training in demography.

51. Only three of the STPA English-speaking centres currently organise post-graduate university training. They are the Department of Statistics, University of Ghana (Legon), the Department of Statistics, University of Ibadan, and RIPS which, like IFORD, provides specialised training in demography. It appears that the Legon and Ibadan centres do not offer courses for specialisation leading to the M.Sc. and post-graduate diploma. At the Legon centre, the final year students have to select two courses with the approval of the centre and take one compulsory course on the theory of probability in addition to a practical course. At the Ibadan centre, an optional course which has nothing to do with specialisation enables the student to have the number of units required for obtaining the degree. It is worth

mentioning in this connection that ISAE (Kampala) intends opening as early as possible, cycles of training leading to post-graduate diploma (Dip.Stat) and M.Stat or Masters in Statistics. Provisions have been made for optional specialisation courses in the field of national accounting, demography and social statistics, economic statistics, agricultural statistics, sampling techniques and computer science. Besides, courses for operational research and econometry constitute additional options for the M.Stat programme.

52. Six STPA French-speaking centres offer courses leading to the "Diplome d'ingénieur des travaux statistiques" (or "ingénieurs d'application de la statistique"). These centres are the College of Statistics (Dakar), ENSEA (Abidjan), IAMSEA (Kigali), INPS (Algiers), INSEA (Rabat) and ISPEA (Yaounde). Most of these centres also organise optional courses for the final year students. At the ISPEA, the students have the choice between statistics and applied economics. Until the introduction of new reforms, the INPS used to have two options (statistics and economic analysis) for the"cycle des ingénieurs d'application de la statistique". This cycle was replaced by the cycle for the training of "techencieans superieurs"(senior technical statisticians) but the secretariat has no information about the options existing at this level. The final year students at the INSEA participated in the study and research groups of their choice. It should further be pointed out that this centre also offers a four-year training course for the "ingénieurs analystes informaticiens" and a two-year course for the "adjoints techniques programmeurs". ENSEA has 4 options: Computer Science, Management, Applied Statistics and Demography. It appears that there are no optional courses at IAMSEA and at the College of Statistics of Dakar although the latter states that the third year is solely a year of specialisation and refresher courses.

53. Five STPA English-speaking centres provide training leading to the first degree in Statistics (B.A., B.Stat and B.Sc.). These are the ISAE, Kampala, the Departments of Statistics of the University of Ghana, the University of Ibadan, the University College of Botswana and the National University of Lesotho (NUL). Most of these centres practise the single or double major system of specialisation in Statistics. In the case of the University of Ghana, Legon, to qualify for a double major specialisation, the students have to select, apart from statistics, one of the following subjects: Economics, Mathematical Statistics, Computer Science or Mathematics. At the Lesotho centre (NUL), the most common areas of specialisation are Economics, Mathematics, Human Geography or Biology.

54. It emerges from the short review given above, that apart from IFORD and RIPS which offer specialisation courses in demography, no other STPA centre provides courses for specialisation in a specific area of applied statistics like national accounting, agricultural statistics, sample surveys and electronic data processing. Such specialisation courses are, as of now, only given by centres outside the African region, particularly STPA associate centres such as the Munich Centre and the ISPC, Washington.

55. Although the level of ITS training (or IAS or B.Sc or B.A. or B.Stat) cover general courses in statistics and related areas, it seems useful that all STPA centres offering courses at this level should adopt the system of optional courses so as to stimulate the interest of the students for future specialisation and to orient them immediately to areas where they are likely to work after obtaining their degrees. An important place should be given to data processing. application and analysis. Furthermore, the teaching of applied statistics should be intensified.

56. With regard to ISE level of training (post-graduate diploma or M.Sc.), the need to organise optional courses at this level is recognised especially as regards STPA English-speaking centres. Special emphasis should be placed on both the teaching of statistical methods (sampling, statistical computer science, etc...) and those methods which will help in the acquisition of specialised knowledge in applied statistics.

57. As was mentioned above, the draft guide syllabus for professional statistical training to be submitted to the fourth meeting of the Directors of STPA centres emphasize courses in Applied Statistics. It would be necessary to widen the scope of some of these courses further, to enable the STPA centres which so wish, to offer specialisation courses.

(iv) Assistance to countries wishing to establish in-service training programmes at middle level

58. As was said earlier, several countries of the region have already created national facilities for the training of middle level statistical staff. The system adopted in organising this type of training varies from country to country. In most of the French-speaking countries, the training is given on full time basis just like at the STPA centres. In the other countries, especially English-speaking countries, the courses are run in the evening or between the working hours and the students' free time. The assistance to be given within the framework of the STPA concerns both the part-time and the full-time training.

59. Missions have been sent to several countries of the region where these facilities already exist to gather up-to-date information on the organisation and the running of the courses, discuss with the authorities concerned the difficulties encountered and suggest solutions. Programmes of the teaching of these national facilities were also subjects of wide-range exchange of views, especially in the light of the guide syllabuses for middle level and in-service statistical training drawn up by ECA.

60. Missions were also sent to some countries where such middle level statistical training national units do not as yet exist. It was noted that in most cases, plans were already in progress for the establishment of these units but certain administrative and technical arrangements were to be finalised and concrete proposals made before they would be implemented. The missions in question were therefore organised at the appropriate time to assist the interested countries in these tasks.

61. Other missions will be sent to the countries not yet visited. Follow-up missions will also be sent to other countries, if necessary.

62. The organisation of this type of training requires the participation of one or more national heads depending on the scope of the project. However, experts have been provided in some cases through external assistance for a limited period, to help the national heads in launching their training programmes. This is the case of the Central African Republic and Rwanda whose projects are benefiting from the assistance of experts from EEC or FAC. In Niger, the expert was recruited through French technical co-operation assistance programme but

to a good lecturer, or encouraging staff exchange through the twinning of a Third World University with a university in a developed country. Other participants, on the other hand, emphasized that lecturers should possess solid theoretical knowledge which would enable them to adapt to changes in statistical technique. Furthermore, they emphasized the need for the lecturers to contribute to the development of statistics research in Africa. In conclusion, the meeting recognised that there was no single method for training the trainers. It was, however, agreed that the training of trainers demanded much more than just importing of technical knowledge and included such questions as how to teach. Besides, conditions prevailing in the individual centres should be taken into consideration, while bearing in mind the aspirations and interests of the individuals to be trained. In the light of these discussions, certain decisions were taken within the framework of the regional component of the STPA financed by UNDP, namely:

- Fellowships may be awarded for a maximum period of two years;
- Lecturers at middle level statistical training centres may apply for fellowships to study courses leading to a degree no higher than Masters;
- One-year specialisation courses are to be encouraged;
- All suggestions relating to the method of training the lecturers, which would take into account the conditions and specifications of each centres, would be examined with interest.

74. In order to ensure the effective utilisation of the trained teaching staff, it seems necessary to reiterate the following suggestions put forward and accepted by the third meeting of Directors of STPA centres:

- Candidates for fellowships to train as lecturers should be sponsored by the centres concerned, which will at the same time undertake to use their services on a full-time basis in the centres in question.
- Candidates holding fellowships should sign a bond to serve the sponsoring centres for at least five years after completion of their training. A signed copy of this bond should be sent to the agency financing the fellowship.

(vii) Other activities

75. This section deals briefly with matters relating to the teaching of statistics in secondary schools, critical analysis, and periodic evaluation of the STPA activities, as well as co-ordination of the activities of the Programme.

76. With regard to the introduction of statistics as a subject in secondary schools, it should be pointed out that nothing has so far been done within the framework of the STPA. This situation might have been due to the fact that it is a long-term project which calls, among other things, for the preliminary preparation of text-books devised for secondary schools, as well as the adoption of a curricula reform by the educational authorities of each country. Now, all reforms are considered in most countries of the region and, even, in other countries first and foremost from the angle of their financial implications. Nevertheless, it will no doubt be useful to explore, with UNESCO support, the possibilities existing in this area.

77. On the question of the critical analysis and evaluation of the STPA, it should be emphasized that the biennal meeting of Directors of centres participating in the programme, and the Joint Conference of African Planners, Statisticians and Demographers, constantly include on the agenda of each of their meeting, an item relating to the discussions of problems pertaining to the development of the STPA. It should also be pointed out that informal or formal tripartite meetings of the STPA are held periodically with UNDP. Besides, the joint EEC/ACP/ECA study on the statistical training needs in Africa, also contributes to the critical analysis and evaluation of the STPA. Finally, this document, despite its shortcomings, is intended to serve as an evaluation of the STPA and to map out the directives for future actions.

78. With regard to the co-ordination of the activities of the programme, all the parties concerned should be commended for their willingness and co-operation: African Governments, STPA and associate centres, other training centres in Africa, bilateral and multilateral aid agencies, as well as national and international institutions. Admittedly, problems do exist, but efforts are made each day to solve them. One of the recent developments relating to the co-ordination of the activities of the programme was the implementation of an EEC assistance project for STPA, financed under the regional comment of the European Development Fund (EDF). This question will be discussed in more detail under agenda item 9(a) of the meeting of the Directors of STPA centres. Finally, as has already been indicated, the meeting of Directors has played a major role in the co-ordination of STPA activities. The fact that it is held regularly, has also been a contributory factor in this role.

VI. CONCLUSION AND FUTURE WORK PROGRAMME

79. In conclusion, it should be stated that, even if the objectives of the STPA have not been fully attained during the first seven years of the implementation of the programme, notable efforts have been made in this direction. Admittedly, problems of fellowships for courses at centres, limited accommodation facilities at the centres, difficulties faced by certain African countries in securing admission to centres for candidates, etc... still exist. Nevertheless, it is hoped that current or future measures within the STPA framework would make it possible to resolve these problems.

80. There is a need to integrate National Institutions which are training professional statisticians into the network of training facilities intended to satisfy African regional needs in statistical staff of this level, within the framework of STPA, especially in the English-speaking countries. Efforts at re-orienting the centres' teaching curricula so as to make them more practical will no doubt come up against difficulties. Nevertheless, this should not make us lose hope in our efforts in this direction.

81. The need for the two STPA French-speaking centres, ENSEA, Abidjan, and ISPEA, Yaounde, to open a section for the ISE level training during the coming years is more and more felt. It is hoped that this project can be realised within a maximum of five years, taking, of course, into account the fact that it is a difficult operation and that it should be carefully prepared so as to maintain the recognised level of this training. It is also proposed that one or two English-speaking STPA centres, ISAE, Kampala, and/or the Ibadan centre should conduct specialised post-graduate training courses. The creation and expansion of national units for the

financed by the World Bank. The project in Zambia was initially supported by UNDP which had an expert but that assistance was phased out. Similarly, in Zimbabwe, an expert was supplied by the Overseas Development Administration (ODA) but he had also left. It should be recalled that a consultant had been recruited by ECA within the framework of special assistance to Portuguese-speaking African countries to assist in launching in-service statistical training programmes in Sao Tome & Principe and Guinea Bissau.

(v) Organisation of short-term courses and seminars for practicing statisticians

63. The list of short-term statistical courses and seminars organised during the 1983-85 period, and those planned for the 1986/87 period by STPA and associate centres as well as other training institutions will be submitted under agenda item 7(b) of the Fourth Meeting of Directors of Centres participating in the Programme for consideration.

64. Indeed, taking the period from 1978 when the STPA was established, to the present date, it will be observed that only a small number of short-term seminars and courses have so far been organised by STPA centres. However, it should be noted that these centres have shown growing interest in this area of activities, in recent years. Eight STPA centres had planned to organise such short-term courses during the 1983-85 period. They were, for the French-speaking centres: the College of Statistics (Dakar), CESD (Paris) IFORD (Yaounde) and INSEA (Rabat); and for the English-speaking centres: EASTC (Dar-es-Salaam), ISAE (Kampala), RIPS (Legon) and the Statistics Department of the National University of Lesotho. Some centres, such as ENSEA (Abidjan) and ISPEA (Yaounde) have indicated that they had hosted similar short-term seminars and courses organised by other bodies. Five STPA centres have apparently not undertaken any activity in this field during the period under consideration.

65. The associate STPA centres have been very active in organising seminars, courses and short-term training sessions. It should be pointed out for example, that between 1978 and 1984, ISPC (Washington) had trained 281 candidates from 30 African countries, through seminars and training workshops and 272 candidates from the same countries, who attended annual training courses offered by the Institute in various fields of applied statistics. Similarly, the Munich Centre for Advanced Training in Applied Statistics had, during its 4 months courses in various applied statistics subjects, trained about 500 candidates, mainly from African countries, the Caribbean and Pacific States (ACP) associated with the European Economic Community (EEC) through the Lome Convention. More than 70 per cent of these candidates came from Africa. Since 1980, the centre has also been organising 4-5 week long courses in countries covered, especially in Africa. Detailed information on the activities of all the centres concerned will be found in the Directory of STPA and associate centres.

66. Other centres situated outside the region have also contributed to the organisation of refresher courses for practicing African statisticians. The following may be cited as example: the U.S. Department of Labour, Washington, the University of Strathclyde Fraser of Allander Institute, Glasgow, United Kingdom, and the Tashkent Agricultural Institute, Tashkent, USSR.

67. In conclusion, it should be recommended that STPA centres should endeavour to organise more internal seminars and training workshops in various fields of applied statistics. An appeal is being made to donor agencies to assist STPA centres undertake these activities.

68. The contributions from associate centres in this field are highly appreciated. It is hoped that these contributions will be maintained and further increased. Besides, associate centres should organise, where possible, some courses in Africa itself, with a view to reaching a wider audience and adapting statistical technique to regional realities.

69. In addition to refresher courses for working statisticians, seminars should also be organised for the users of statistics (Ministries of Planning, Economy, Finance, Central Banks, etc...). Furthermore, exchange of ideas between producers and users of statistics should be encouraged. Finally, in future, emphasis should be placed on certain fields, such as statistical data processing, data utilisation and analysis, the food accounting matrix, agricultural statistics, etc.. which are the current subjects of concern to African countries.

(vi) Training of trainers

70. In order to cope with the increased number of students to be trained and maintain high teaching standards, STPA centres must not only augment the number of their teaching staff but also improve their quality.

71. In 1978, when the STPA was established, the total number of the teaching staff of the twelve centres which were its original members, was estimated at 97 including 44 expatriate. These centres thought that, for the objectives of the STPA to be attained, it was necessary to bring the number of their teaching staff to be over 80 per cent or to a total of 180 lecturers, including 99 expatriates. According to the provisional estimates, the total number of lecturers at post in the 12 centres concerned would be 154 including 37 expatriates.

72. It should be pointed out that several fellowships had been offered for the training of teaching staff for the STPA centres. The fellowships were provided either by the centres themselves, their host countries, bilateral or multilateral donor agencies, or national and bilateral institutions. Unfortunately, the secretariat has no information on the total number of fellowships offered. It may, however, be mentioned that 16 fellowships for courses ranging from 3 months to 2 years, were awarded to lecturers of these centres, within the framework of the regional component of the STPA which is financed by UNDP. Furthermore, 2 fellowships for 3-year courses were exceptionally awarded. It was noted that some of the lecturers failed to return to their centres of origin on completion of their training and it appears no steps had been taken beforehand to prevent such a situation. However, it should be pointed out that all those holding fellowships under the regional component of the STPA financed by UNDP had returned to their centres of origin on completion of their studies.

73. The question on how to train lecturers was exhaustively discussed at the third meeting of Directors of STPA centres. Some participants were of the opinion that long periods of studies leading to a doctorate degree were unnecessary and that lecturers should rather be encouraged to acquire practical experiences through attachments to national statistics offices, posting to an institution as assistant

training of the middle level statistical staff, including in-service training, should be given higher priority than before. It would be necessary to maintain the ties existing between these national units and national statistics departments and the STPA centres offering courses for the staff at this level.

82. Particular attention should be given to the training of middle level statistical staff needed by the Portuguese-speaking African countries, within the framework of the project for special assistance to these countries. With regard to the training of professional statistical staff, STPA centres can make contributions in this area by drawing from the experience of the College of Statistics of Dakar which had successfully trained nationals of Cape Verde and has also recently admitted candidates from Guinea Bissau for ITS courses.

83. Additional resources should be placed at the disposal of the STPA centres to enable them achieve their objectives, especially by providing them with visiting professors, granting of fellowships for the training of trainers, supplying them with equipment (micro-computers, calculators, reproduction equipment, etc...) and support for the organisation of short-term seminars and courses.

84. All the other activities earmarked as part of the implementation of the STPA, particularly those concerning the co-operative development of teaching programmes, specialisation, dissemination of information on statistical training activities and co-ordination of the activities of the programme, should be sustained and strengthened.

85. In the light of the conclusions on the present evaluation, the following work programme, presented in brief, is being proposed to guide future actions for the development of the overall STPA programme.

A. Operational support for all STPA centres to enable them contribute effectively to the attainment of the programme's objectives, particularly:

(i) Assistance for the training of trainers. This assistance should take into account the various prevailing situations according to the system within which the centre is operating, the juridical nature of the centre, the status of the teaching staff and the level of the courses offered.

(ii) Supply of consultants on a short-term basis to give lectures in certain specialised areas.

(iii) Supply, according to the needs, of full-time lecturers pending the return of the instructors from training.

(iv) Provision of equipment, particularly micro-computers, calculators, reproduction equipment, etc...

(v) Support, according to the needs, for the expansion or construction of premises.

(vi) Support for the organisation of seminars and working groups in such priority areas of applied statistics as statistical computer science, national accounting, agricultural statistics, sample surveys, data utilization and analysis.

B. Assistance to two French-speaking STPA centres for the opening of a section for the training of statistician-economists and to one or two English-speaking STPA centres for the establishment of post-graduate specialised training courses;

C. Assistance to African countries which may wish to set up or develop national units for the training of middle level statistical staff, including in-service training; special attention will be given to Portuguese-speaking African countries in this area;

D. Support for African national centres for the training of high level statistical staff: this support will be given by aid institutions within the framework of the indicative planning figures for each country; however, it will be necessary to involve these centres in the co-operative development of teaching programmes to ensure a more practical re-orientation of their courses;

E. Co-operative development of teaching programmes, periodic review of the guide syllabuses for professional, middle level and in-service statistical training prepared within the framework of STPA and preparation of teaching materials especially in the field of applied statistics;

F. Dissemination of information on statistical training activities in Africa and outside the region;

G. Periodic evaluation of the activities undertaken within the framework of STPA; to this end, it will be necessary to review yearly the performance of the STPA centres and conduct periodic survey of statistical organisation and staffing in Africa;

H. Co-ordination of the overall activities undertaken within the context of STPA, including initiation of measures to facilitate planning of fellowships for studies in STPA and associate centres and to soften the procedures for awarding fellowships and co-ordination of external assistance, particularly the project for EEC assistance to STPA and the regional component of the programme financed by UNDP.

86. The implementation of the above work programme calls for the active participation of all interested parties, African Governments, STPA and associate centres, national statistical training centres and units, bilateral and multilateral bodies as well as ECA and other interested national and international institutions.

87. The fourth meeting of the Directors of centres participating in STPA is invited to:

1. Make comments and suggestions on the evaluation of the performance of the STPA centres since the programme was established in 1978 to-date;

2. Make comments and suggestions on the evaluation of the activities undertaken within the framework of STPA;

3. Amend and adapt the proposed work programme which will guide the future actions of the STPA as a whole.

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IMPACT OF THE GUIDE SYLLABUS FOR TRAINING AT STPA CENTRES, OTHER TRAINING CENTRES AND STATISTICAL OFFICES

GUIDE SYLLABUS FOR MIDDLE LEVEL STATISTICAL TRAINING

Table of Contents

		Paragraphs
I.	Introduction	1-2
II.	The STPA centres offering middle level training	3-4
III.	The ECA guide syllabus for middle level personnel in statistics and its objectives	5-7
IV.	Middle level syllabuses being used at STPA centres	8-10
V.	Comparative analysis of the syllabuses	
	(a) Introduction	11-12
	(b) Subject coverage	13-15
	(c) Hours covered per subject	16-17
	(d) Coverage of topics within subjects	18-21
VI.	Conclusion	22-23

I. INTRODUCTION

1. The original purpose of this paper was to discuss the impact of the ECA guide syllabus for middle level personnel in statistics in the formulation or improvement of teaching programmes at STPA centres. The guide syllabus (document ST/ECA/STPA/DM.2/3/Rev.1) was prepared by ECA during 1982. However it was considered too early to measure this impact since for practical purposes there has been only three academic years since the syllabus was produced. Such an interval of time is not sufficient for existing syllabuses of the training centres to reflect the recommendations of the guide syllabus. It was therefore decided that it is useful at this stage to compare the guide syllabus prepared by ECA and the syllabuses prepared and being utilised by STPA centres for their middle level training programmes. This is one way of measuring the extent to which the syllabuses agree or differ in their contents. At a later stage ECA will discuss with the individual STPA centres, with the purpose of measuring the extent to which the ECA guide syllabus has been or is intended to be utilised in the formulation or improvement of teaching programmes.

2. The comparison of the syllabuses will be done for the subjects, topics with subjects and the number of hours devoted to each subject. It may be recalled that the Statistical Training Programme for Africa (STPA) has admitted fifteen centres to become part of the programme. There are seven centres in the French-speaking African countries and the eighth French-speaking centre is in France. There are also in addition seven centres in the English-speaking African countries. The centres offer middle level statistical training, professional level statistical training or a combination of the two. These centres can be classified into three categories as follows:

(a) Those offering middle level statistical training programmes only;

(b) Those offering professional level statistical training programmes only;

(c) Those offering both middle level and professional level statistical training programmes.

This paper deals only with centres falling into categories (a) and (c) since they deal with middle level training.

II. THE STPA CENTRES OFFERING MIDDLE LEVEL TRAINING

3. There are four STPA centres in the English-speaking African countries which offer middle level statistical training leading to the certificate or diploma qualification. Some of the centres offer in addition professional statistical training leading to the degree in statistics. The names of the centres and their locations,,types of middle level courses offered and the duration of the courses are as follows:

	Name of the centre and location	Type of middle level course offered	Duration of the course
(a)	Eastern Africa Statistical Training Centre (EASTC) (Tanzania)	i) Certificate in Stat. ii) Diploma in Stat.	One academic year One academic year
(b)	University of Ghana, Institute of Statistical Social and Economic Research (ISSER) (Ghana)	i) Certificate in Stat. ii) Diploma in Stat.	One academic year One academic year
(c)	University of Botswana Department of Statistics (Botswana)	i) Certificate in Stat. ii) Diploma in Stat.	One academic year Two academic years
(d)	National University of Lesotho (NUL) Dept. of Statistics	i) Certificate in Stat. ii) Diploma in Stat. (suspended at the moment)	Two academic years One academic year

4. There are three STPA centres in the French-speaking African countries which offer middle level statistical training programmes leading to the Agents techniques (certificate) and the Adjoints techniques (Diploma) qualification. These centres offer in addition the degree qualifications in statistics. The names of the centres and their locations, types of middle level courses offered and duration of the courses are as follows:

	Name of the centre and location	Type of middle level course offered	Duration of the course
(a)	Ecole nationale superieure de statistique et d'economie appliquée (ENSEA), Ivory Coast	i) Agents techniques ii) Adjoints techniques	One academic year Two academic years
(b)	Institut de statistique de planification et d'économie appliquée (ISPEA), Cameroon	i) Agents techniques ii) Adjoint techniques	One academic year Two academic years
(c)	Collége statistique, Ecole nationale d'économie appliquée (ENEA), Senegal	Agents techniques de la statistique	Three academic years

III. THE ECA GUIDE SYLLABUS FOR MIDDLE LEVEL PERSONNEL IN STATISTICS AND ITS OBJECTIVES

5. It may be recalled that the guide syllabus was published in May 1982. It is a revised version of the guide syllabus which was presented to the second meeting of Directors of STPA centres which was held in Addis Ababa, Ethiopia in November 1981.

6. The guide syllabus was developed to satisfy two levels of teaching namely the certificate (Agents techniques) and the Diploma (Adjoints techniques). The guide syllabus is presented in two sections, one section for the centres in the English-speaking African countries and the other section for the centres in the French-speaking African countries including the centre located in France.

7. The objectives of the guide syllabus are as follows:

(a) At the certificate level: to make students familiar with

i) Basic statistical concepts;

ii) Statistical techniques commonly used in data collection and analysis;

iii) General problems of data collection procedures and analysis in relation to some specific subject areas;

iv) Basic economics; and

v) Necessary background knowledge in mathematics

(b) At the Diploma level: to train students to acquire higher technical skills than those acquired at the certificate level. Such staff are expected to play a supervisory role in their respective statistical organisations.

IV. MIDDLE LEVEL SYLLABUSES BEING USED AT STPA CENTRES

8. In order to carry out a comparison of the syllabuses there was need to assemble the syllabuses which the STPA centres were currently using for their middle level statistical training programmes. The information on syllabuses for the centres which the secretariat had at its disposal was as follows:

English-speaking STPA centres	Date of syllabus
EASTC	1979
ISSER	1983
University of Botswana	1979/80
NUL	1978/79

French-speaking STPA centres	Date of syllabus
ENSEA	1982/83
ISPEA	1979/80
ENEA	Not specified

The details supplied in the syllabuses of the centres were supplemented by details on teaching programmes for middle level courses which were supplied by centres to the secretariat for the compilation of the Directory of STPA and Associate centres (Document E/ECA/STPA/DM4/11).

9. Contacts were established with the Directors of the STPA centres, except those of ISSER and ENEA, in January 1985. The Directors were requested to supply their latest middle level syllabuses and to also assist in the comparison of their syllabuses with the ECA guide syllabus. Reminders were sent to the Directors in April 1985. A high non-response rate was observed (since only one centre (EASTC) responded) and as such the secretariat decided to use the information on syllabuses of the centres which was at its disposal, in order to carry out the comparison exercise.

10. In carrying out the comparison an assumption was made that the syllabuses of the centres have not changed greatly over time. A good example is EASTC whose syllabus is dated 1979 and was sent to the secretariat by the centre as its latest syllabus.

V. COMPARATIVE ANALYSIS OF THE SYLLABUSES

(a) Introduction

11. The comparison of the syllabuses was done on the subjects, topics, within subjects and teaching and practical hours devoted to the subjects for each course. Tables 1,2,3,4 and 5 show the results of the comparison

12. The comparison was achieved in the following way : A list of subjects or topics which were available in the syllabuses was made and by marking an "X" against the subject or topic available in the French- or English-speaking STPA centre including the ECA guide syllabus, it has been possible to indicate which subjects or topics are covered by the syllabuses of ECA or the centres. The same thing was done for the number of hours covered per subject of each course. The hours were entered against the subjects covered by the training centres including the ECA guide syllabus. Comments on the results of the comparison will be restricted to the major differences which have been observed in the comparison.

(b) Subject coverage

13. The results of the comparison are shown in tables 1 and 2 for both the certificate and diploma courses . In general the coverage of the subjects differs for the two language groups (English and French). The coverage of subjects in the French-speaking centres syllabuses is more (over 50%) than the coverage in the English-speaking centres syllabuses (the majority less than 50%) at both the certificate and diploma levels. The coverage of subjects in the ECA guide syllabus is 80% at the certificate level and 87% at the diploma level. The subject coverage of syllabuses of some centres may be less due to the fact that elective courses are not specified and that only the total number of credit hours for the elective courses are specified. Examples of centres with this system are the National University of Lesotho (NUL) and the University of Botswana.

14. At the certificate level comparison, the following observations are made:

(i) The ECA guide syllabus does not list the subject of physical education (sports). The subject of communication skills is dealt with partly in the English subject as is the case at the EASTC.

(ii) The following subjects do not appear in the English-speaking centres syllabuses namely Economic geography, commercial law, French, physical education (sports) and sociology.

(iii) All subjects except the subject of practicals are listed in the French-speaking centres syllabuses. It is the understanding of the secretariat that in the French-speaking centres, practicals are regarded as part of the subjects and that practicals are not specifically regarded as a subject on their own as happens in some of the English-speaking centres. Some English-speaking centres may also be following a similar system i.e. the University of Botswana and the National University of Lesotho (NUL) which did not list the subject of practicals specifically.

15. At the diploma level, the following observations are made:

(i) The ECA guide syllabus does not list the subject of physical education (sports).

(ii) The following subjects do not appear in the English-speaking centres syllabuses namely, economic geography, business accounting, French and physical education (sports).

(iii) The subjects of sociology, commercial law and practicals do not appear in the syllabuses of the French-speaking centres. A possible explanation for the subject of practicals not appearing in the syllabuses of the French-speaking centres is given in paragraph 14(iii).

(c) Hours covered per subject

16. It should be noted that the English-speaking centres syllabuses are compared with the English-speaking centres ECA guide syllabus and the French-speaking centres syllabuses are compared with the French-speaking centres ECA guide syllabus. The results of the comparison are shown in table 3 for both the certificate and diploma levels. The syllabuses of three English-speaking centres namely, EASTC, University of Botswana and National University of Lesotho (NUL) had information on number of hours per subject per year. Some of the lecture hours at the University of Botswana and the National University of Lesotho have been estimated using information available in the 1978/79 National University of Lesotho calender. The syllabuses of two French-speaking centres namely ISPEA and ENSEA had information on number of hours per subject per year. Since the ECA guide syllabus of the French-speaking centres did not specify hours of lectures and practicals separately as was done in the English-speaking centres ECA guide syllabus, table 3 follows the presentation in the guide syllabus.

17. The total number of hours devoted to the certificate or diploma course at EASTC are not significantly different from those specified in the ECA guide syllabus. The number of hours devoted to the certificate course at the National University of Lesotho and the University of Botswana are not significantly different from the hours specified in the ECA guide syllabus. At the diploma level the University of Botswana syllabus specifies more hours in total than those specified in the ECA guide syllabus. The National University of Lesotho diploma syllabus specifies less than half the total number of hours specified in the ECA guide syllabus. The total number of hours specified for the certificate or diploma courses in the French-speaking centres syllabuses are less than those specified in the ECA guide syllabus. At the individual subject level the situation for both the English- and French-speaking centres is that while as some subjects may have more lecture/practical hours devoted to them than others when compared to the ECA guide syllabus, others have less lectures/practicals hours devoted to them.

(d) Coverage of topics within subjects

18. The results of the comparison are shown in tables 4 and 5. Table 4 shows the details of the topics which are covered in the syllabuses of ECA and the centres while table 5 shows the coverage of topics within subject at each STPA centre and ECA guide syllabus presented in percentage form. It should be noted that in the presentation some topics may have been grouped due to their being of the same type. It should also be noted that the number of topics per subject varies from subject to subject and from STPA centre to centre.

19. It should be mentioned that in some of the centres, for example the University of Botswana and the National University of Lesotho, students are supposed to take elective courses for their studies. The elective courses at the two centres are not specified in their syllabuses, hence it is difficult to know which elective courses are covered in the teaching programmes. It is therefore possible that for some subjects the topics covered may be indicated to be less than what the actual situation at the centre may be.

20. It should be noted further that the Institute of Statistical Social and Economic Research (ISSER) of the University of Ghana has not been included in the comparison of topics due to the fact that the information on topics covered for each subject was not available to the secretariat. Also, due to the similar systems being followed at the Universities of Botswana and National University of Lesotho, it has been assumed that the coverage of topics per subject is the same at the two centres.

21. In examining table 5, it is clear that the coverage of topics per subject in the ECA guide syllabus is 75% and above at both the certificate and diploma levels. With respect to the STPA centres, it is clear that the coverage of topics varies from subject to subject and from centre to centre. In some subjects the topic coverage is as low as 25%. Possible reasons for the coverage differences may be the following :

(a) lack of specifications of subjects and topics for the elective courses;

(b) areas of emphasis in the course programmes i.e. more applied topics as cpposed to theoretical topics;

(c) length of the course programme i.e. one academic year or two academic years.

VI. CONCLUSION

22. The ECA guide syllabus was prepared with the purpose of assisting STPA centres in the preparation or modification of their guide syllabuses for various courses. The STPA centres are expected to modify the contents of the guide syllabus to suit their conditions. The comparison exercise of the syllabuses is expected to assist the secretariat in revising the guide syllabus in future.

23. The meeting of Directors of STPA centres is invited:

(a) To advise on the methodology to be adopted in studying the impact of ECA guide syllabus for training at STPA centres;

(b) To comment on the method adopted by the secretariat in comparing the contents of the syllabuses and also to comment on the results which have been observed through the comparison;

(c) To suggest ways of improving the guide syllabus in the next revision in order to make it meet the needs of the STPA centres.

Subject coverage comparison at the certificate and diploma levels

Subject	ECA Guide. syllabus	English-speaking centres: EASTC	ISSER	Univ. of Botswana	National Univ. of Lesotho (NUL)*	French-speaking centres: ENSEA	ISPEA	ENEA
(a) Certificate level								
- Mathematics	X	X	X	X	X	X	X	X
- Statistical Theory and methods	X	X	X	X	X	X	X	X
- Applied Statistics	X	X	X	X	X	X	X	X
- Economics	X	X	X	X		X	X	X
- Economic geography	X					X	X	X
- Business accounting	X	X						X
- Communication skills	X	X		X	X	X	X	X
- Computer science	X	X			X	X	X	X
- Practicals	X	X	X					
- Field project	X	X	X	X	X		X	
- Sociology								X
- English	X	X		X	X		X	X
- French	X					X	X	X
- Commercial law								X
- Physical education (sports)						X	X	X
(b) Diploma level								
- Mathematics	X	X		X		X	X	Course was cancelled
- Statistical theory and methods	X	X	X	X	X	X	X	
- Applied statistics	X	X	X	X	X	X	X	
- Economics	X	X				X	X	
- Economic geography	X					X	X	
- Business accounting	X					X	X	

* Diploma course was discontinued but information was available from the syllabus.

Subject	ECA Guide syllabus	English-speaking centres				French-speaking centres		
		EASTC	ISSER	Univ. of Botswana	National Univ. of Lesotho (NUL)*	ENSEA	ISPEA	ENEA
(b) Diploma level (cont'd)								Course was cancelled
- Commercial law	X	X						
- Computer science	X	X	X	X		X	X	
- Practicals	X	X						
- Field project	X	X		X	X	X	X	
- Sociology	X	X						
- English	X	X					X	
- French	X					X	X	
- Physical education (sports)						X	X	

* Diploma course was discontinued but information was available from the syllabus.

Percentage coverage of subjects at certificate and diploma levels at each training centre

Level of training	All subjects*	ECA guide syllabus	English-speaking centres				French-speaking centres		
			EASTC	ISSER	Univ. of Botswana	National Univ. of Lesotho (NUL)	ENSEA	ISPEA	ENEA
Certificate	100	80	67	40	47	47	60	73	80
Diploma	100	93	71	21	36	21	71	79	-

* Number of subjects at certificate level = 15
Number of subjects at Diploma level = 14

Comparison of number of hours covered per subject per training course

Subject	English-speaking centres[1]								French-speaking centres			
	ECA guide syllabus			EASTC			Univ. of Botswana	National Univ. of Lesotho	ECA guide syllabus	ENSEA[2]	ISPEA[3]	ENEA
	L	P	Total	L	P	Total	L	L				
(a) Certificate level												
- Mathematics	96	64	160	180	-	180	195	195	64	30	130	
- Statistical theory and methods	154	64	218	120	-	120	195	195	316	275	130	
- Applied statistics	190	64	254	120	90[4]	210	60	60			155	
- Economics	64	-	64	150	-	150	60		40	30	30	
- Economic geography									20	30	35	
- Business accounting									30			
- Communication skills							180	180				
- Computer science							30	30	20			
- Practicals												
- Field project	-	120	120	-	190	190			140	1 month		
- Sociology												
- English									32		30	
- French	64	-	64						20	60	30	
- Commercial law												
- Physical education (sports)							135[5]	135[5]		35		
TOTAL	568	312	880	570	280	850	855	795	682	460	540	

Details not available

1/ L = Lecture, P = Practicals (Laboratory), The University of Botswana and Univ. of Lesotho lecture hours have been estimated by assuming 15 teaching weeks for each semester, no details on hours of lectures/practicals were available for ISSER hence the centre is not listed.

2/ Information obtained from the 1982-83 syllabus.

3/ Hours for the diploma subjects are estimated from the information supplied in the 1983 Directory of STPA centres. Hours of assessment not included in the estimation exercise.

4/ Hours specified cover the topics of statistical computing & elements of accounting.

5/ Hours for 18 units of elective courses for ½ semester.

Subject	English-speaking centres: ECA guide syllabus L	ECA guide syllabus P	ECA guide syllabus Total	EASTC L	EASTC P	EASTC Total	Univ. of Botswana L	National Univ. of Lesotho L	French-speaking centres: ECA guide syllabus	ENSEA	ISPEA	ENEA
(b) Diploma level												
- Mathematics	96	64	160	210	-	210	60		104	100	253	
- Statistical theory and methods	154	64	218	180	-	180	315	135	218	290	288	
- Applied statistics	124	64	188	120	90 [6/]	210	105	120	210	265	299	
- Economics	64	-	64	150	-	150			104	155		
- Economic geography									20	30		
- Business accounting									30	40	161	
- Commercial law	64	-	64						20			
- Computer science							75		50	70		
- Practicals												
- Field project	-	120	120	-	190	190	90	60	420	2 mon.	3 mon.	
- Sociology	64	-	64						20			
- English									64			
- French	64	-	64						20	60		
- Physical education (sports)										70		
- Other							405 [7/]	68 [8/]			149	
TOTAL	630	312	942	660	280	940	1050	383	1280	1080	1150	

Course was cancelled

6/ Practical hours may refer to statistical theory and methods and applied statistics subjects.

7/ Hours for 27 units of other relevant courses.

8/ Hours for 9 units of elective courses for ½ semester.

Within subject level (topics comparison at the certificate and diploma levels

Subject	Topics	English-speaking centres				French-speaking centres		
		ECA guide syllabus	EASTC	Univ. of Botswana	National Univ. of Lesotho (NUL)	ENSEA	ISPEA	ENEA
(a) Certificate level								
i) Mathematics	- Sets	X	X	X	X	X	X	X
	- Numbers	X	X	X	X			
	- Graphical presentation and solutions	X	X	X	X	X	X	X
	- Matrix & linear algebra (determinants)	X	X	X	X		X	
	- Combinatory analysis	X	X	X	X			
	- Sequences & series	X	X	X	X	X	X	X
	- Linear programming/ inequalities	X	X	X	X			X
	- Binomial theorem of an index	X	X	X	X			
	- Complex numbers	X		X	X			
	- Trigonometry	X	X				X	
	- Cartesian geometry	X						
	- Differential & integral calculus	X	X	X	X	X		X
	- Binary relations	X				X	X	X
	- Groups, rings & fields	X				X	X	X
	- Polynomials	X					X	X
	- Variables, functions, continuity & limit	X	X	X	X	X	X	X
	- Numerical computation	X					X	X
	- Co-ordinate geometry		X					
	- Growth models			X	X			
	- Differential equations			X	X			
	- Difference equations			X	X			X

			English-speaking centres			French-speaking centres		
	Subject	Topics	ECA guide syl-labus	EASTC	Univ. of Bots-wana	National Univ. of Lesotho (NUL)	ENSEA	ISPEA	ENEA
(ii)	Statistical theory and methods	- Descriptive statistics	X	X	X	X	X	X	X
		- Measures of central tendency	X	X	X	X	X	X	X
		- Measures of dispersion including moments, skewness & kurtosis	X	X	X	X			X
		- Probability, decision theory	X	X	X	X			
		- Stat. inference	X	X	X	X			
		- Linear association	X	X	X	X			
		- Index numbers and rates	X	X	X	X	X	X	X
		- Time series	X	X			X	X	X
		- Sampling/ planning surveys and experiments	X	X	X	X			X
		- Quality control		X					
		- Contingency tables and tests of goodness of fit			X	X			
(iii)	Applied Statistics	- General officials stat.	X	X	X	X	X	X	X
		- Health statistics		X					X
		- Agriculture tat	X	X			X	X	X
		- Education statistics							X
		- Financial statistics	X					X	
		- Demography	X	X	X	X	X	X	X
		- Industrial statistics	X	X			X	X	X
		- National accounts	X	X			X	X	X
		- Price statistics	X	X			X	X	X
		- Labour & employment Stat.	X	X			X		X
		- Transport statistics	X	X			X	X	X
		- International trade stat.	X	X			X	X	X
		- Statistical organization and operation	X	X	X	X		X	
		- Elements of accounting and the budget	X	X	X	X		X	X
		- Dissememination of information			X	X	X		

Subject	Topics	English-speaking centres				French-speaking centres		
		ECA guide syl-labus	EASTC	Univ. of Bots-wana	Nation-al Univ. of Lesotho (NUL)	ENSEA	ISPEA	ENEA
(iv) Economics	- Micro-economics	X	X			X	X	X
	- Macro-economics	X	X			X	X	X
	- Applied economics	X	X	X	X	X	X	X
(v) Economic geography	- Notions of physical geography	X				X		X
	- African economic geography	X				X		X
	- Major economic groups & their economy pro-duction & marketing	X				X	X	X
	- Major products	X					X	
(vi) Business accounting	- Fundamentals of accounting	X	X					
	- Record of transactions	X	X					
	- Books of original entry (i.e. cash-book etc.)	X	X					
	- Trial balance & its interpretation	X	X					
	- Types of accounts (suspense, nominal & personal, profit & loss & preparation of final accounts	X	X					
	- Partnership and company accounts (i.e joint stock company etc.)	X	X					
	- Depreciation		X					

			English-speaking centres				French-speaking centres		
	Subject	Topics	ECA guide syl-labus	EASTC	Univ. of Bots-wana	National Univ. of Lesotho (NUL)	ENSEA	ISPEA	ENEA
(vii)	Communi-cation skills	- Planning individual study time scheduled for the semester			X	X			
		- Surveying textbooks and assignments			X	X			
		- Note making from texts and lectures			X	X			
		- Improving scientific vocabulary			X	X			
		- Analysing common patterns of scientific writings			X	X			
		- Reading analysis & comprehension			X	X			
		- Classifying information			X	X			
		- Techniques of writing a research paper including library research			X	X			
		- Reading for appreciation and discussion			X	X			
(viii)	Computer science	- Use of machines in office work	X	X	X	X	X	X	X
		- Principles of a computer	X	X	X	X	X	X	X
		- Instructions & programming	X	X	X	X			X
		- Fortran, basic and use of packages	X	X	X	X			X
		- Storage and retrieval		X	X	X			X
(ix)	Practicals	- Mathematics	X						
		- Statistical theory and methods	X	X					
		- Applied statistics	X	X					
(x)	Field project		X	X	X	X	X	X	X
(xi)	Sociology	- Topics not available							

Subject	Topics	ECA guide syl-labus	English-speaking centres: EASTC	Univ. of Bots-wana	National Univ. of Lesotho (NUL)	French-speaking centres: ENSEA	ISPEA	ENEA
(xii) English	- Study of texts to teach idiomatic terms and expressions	X					X	
	- Translation of economic & statistics texts	X						X
	- Oral expressions in English (practice)						X	
	- Reporting techniques	X	X	X	X	X		X
(xiii) French	- Study of economic, social topical text to increase vocabulary	X				X	X	
	- Correspondence, vocabulary, style	X				X	X	X
	- Written and oral apreciation of and commentary on texts reports and summaries	X				X	X	X
	- Introduction to administrative drafting	X				X	X	X
(xiv) Commerical law	- Introduction to public law							X
	- Introduction to constitutional law							X
	- Administration of law							X
(xv) Physical education	- Topics not available							

Subject	Topics	English-speaking centres				French-speaking centres		
		ECA guide syllabus	EASTC	Univ. of Botswana	National Univ. of Lesotho (NUL)	ENSEA	ISPEA	ENEA
(b) Diploma level								
(i) Mathematics	- Infinite series, sequences	X	X				X	
	- Polynomials	X	X					
	- Graphical representation of functions & simple curve tracing	X	X					
	- Functions of several real variables	X	X			X	X	
	- Differential equations	X	X					
	- Integration and differentiation	X	X	X		X	X	
	- Matrices, vectors, linear algebra determinants	X	X	X			X	
	- Analytic geometry and co-ordinate geometry	X	X					
	- Principles of mathematical induction exponential		X					
	- Logarithm, trigonometric and hyperbolic functions	X				X	X	
	- Set theory	X				X	X	
	- Algebraic structures	X				X	X	
	- Principals of numeration systems	X				X	X	
	- Inequalities	X	X			X	X	
	- Equations, system of equations of first order & second order	X				X	X	
	- Numerical functions	X				X	X	
	- Limits & continuity	X				X	X	
	- Numerical computation, linear interpolation	X	X				X	
	- Application in economics			X				
	- Complex numbers		X					

			English-speaking centres				French-speaking cer		
	Subject	Topics	ECA guide syl-labus	EASTC	Univ. of Bots-wana	National Univ. of Lesotho 1/ (NUL)	ENSEA	ISPEA	ENE
(ii)	Statistical theory and methods	- Probability (continuous random variables and standard distribution)	X	X	X	X	X	X	
		- Statistical inference (estimation & hypothesis testing)	X	X	X	X	X	X	
		- Sampling & sampling distributions	X	X	X	X	X	X	
		- Analysis of variance	X	X	X	X			
		- Contingency tables	X	X	X	X			
		- Time series analysis	X	X	X	X	X	X	
		- Linear programming	X	X					
		- Indicies	X			X	X	X	
		- Descriptive statistics	X	X	X	X	X	X	
		- Statistical organisation	X				X	X	
		- Collection of information	X	X			X	X	
		- Non-parametric methods		X	X	X			
		- Regression & correlation	X		X	X	X	X	
(iii)	Applied statistics	- Introductory econometrics			X	X			
		- Organisation of statistical survey	X	X	X	X			
		- Demography	X	X	X	X	X	X	
		- Education statistics	X	X					
		- Housing statistics	X	X					
		- Balance of payments statistics	X	X					

1/ For National University of Lesotho and also University of Botswana, topics such as regress and correlation, time series, index numbers, estimation and tests of hypothesis, analysis of variance and non-parametric methods which are listed in the applied statistics course are already covered in statistical theory and methods course.

Subject	Topics	ECA guide syllabus	EASTC	Univ. of Botswana	National Univ. of Lesotho (NUL)	ENSEA	ISPEA	EN
		English-speaking centres				French-speaking ce		
(iii) Applied Stat.(cont'd)	- Financial statistics	X	X				X	
	- National income accounting	X	X				X	
	- Statistics of planning	X	X					
	- Medical (Health) stat.	X	X					
	- Research methods	X						
	- Organisation & supervision of statistical work	X	X					
	- Labour & manpower stat.	X	X	X	X	X	X	
	- Price statistics	X	X				X	
	- External trade	X	X			X	X	
	- Industrial statistics	X	X			X	X	
	- Transport statistics	X	X			X	X	
	- Agricultural statistics	X	X			X	X	
	- National statistical legislation		X					
	- New developments in applied statistics		X					
(iv) Economics	- Micro-economics	X	X			X	X	
	- Macro-economics	X	X			X	X	
	- Applied economics	X	X			X	X	

Subject	Topics	English-speaking centres: ECA guide syllabus	EASTC	Univ. of Botswana	National Univ. of Lesotho (NUL)	French-speaking cent: ENSEA	ISPEA	ENE
(v) Economic geography	- Major world commodities production & export	X				X	X	
	- Agricultural and industrial production	X				X	X	
	- Ores and raw materials	X				X	X	
	- Energy products	X				X	X	
	- World international traffic	X				X	X	
	- Economic groupings outside & inside Africa	X				X	X	
(vi) Business accounting	- Business as an economic agent	X				X	X	
	- Accounts	X				X	X	
	- Accounting plan	X				X	X	
	- Accounting operations at end of financial year	X				X	X	
	- Operating account	X				X	X	
	- Management analysis	X				X	X	
	- Linkage between business accounting & national accounts	X				X		
	- Balance sheet	X						
(vii) Commercial law	- General introduction	X						
	- Legal subjects i.e disabilities, classification of property, contract, ones rights	X						
	- Trade	X						
	- Obligations & rights of commercial enterprises	X						

Subject	Topics	English-speaking centres: ECA guide syllabus	EASTC	Univ. of Botswana	National Univ. of Lesotho (NUL)	French-speaking centr: ENSEA	ISPEA	ENEA
(viii) Computer science	- Data problems	X		X	X			
	- Errors and verifications	X		X	X			
	- Data carriers	X						
	- Review of numeration systems, binary numbers	X						
	- Hardware	X				X		
	- Software (machine languages, fortran, basic, algol cobol)	X		X	X	X	X	
	- Controls in data processing	X		X	X			
	- Organisation of a data processing centre	X						
	- Logic and optional designs of programmation	X				X	X	
	- Concrete application	X					X	
	- Elements of data processing (editing, coding, punching etc.)			X	X			
	- Computers, flow charts and programming languages			X	X			
(ix) Practicals	- Mathematics	X	X					
	- Statistical theory and methods	X	X					
	- Applied statistics	X	X					
	- Economics		X					
(x) Field project		X	X	X	X		X	

Subject	Topics	English-speaking centres				French-speaking centres		
		ECA guide syl-labus	EASTC	Univ. of Bots-wana	National Univ. of Lesotho (NUL)	ENSEA	ISPEA	ENEA
(xi) Sociology	- Introduction to sociology	X						
	- Principles & methods of sociology	X						
	- Culture and social organisation	X						
	- Social structure and social change	X						
	- Norms, values and socialization	X						
	- Social differentiation and stratification, social mobility	X						
	- Social institutions	X						
	- Sociology and economics selected interrelated issues	X						
	- Social research methods	X						
(xii) English	- Study of texts to learn idiomatic terms and expressions	X					X	
	- Translation of economic social or topical texts	X					X	
	- Vocabulary building and grammar learning	X					X	
	- Reporting techniques		X					
(xiii) French	- Comprehension of topical economic, social texts	X				X	X	
	- Note taking, writing of summaries & comments	X				X	X	
	- Text analysis, tilting	X				X	X	
	- Vocabulary building	X				X	X	

Subject	Topics	English-speaking centres				French-speaking centres	
		ECA guide syl-labus	EASTC	Univ. of Bots-wana	National Univ. of Lesotho (NUL)	ENSEA	ISPEA	ENEA
(xiii) French (cont'd)	- Expressions	X				X	X	
	- Administrative drafting, style, reports instructions	X				X	X	
	- Increased readability	X				X	X	
	- Practice in oral presentation of selected topics	X				X	X	
(xiv) Physical education (sports)						X	X	

Percentage coverage of topics within subjects at STPA centres

Subject	Number and percentage of topics listed		Coverage of topics (%)						
	Number	%	ECA guide syllabus	EASTC	Univ. of Botswana	National Univ. of Lesotho (NUL)	ENSEA	ISPEA	ENEA
Certificate level									
- Mathematics	21	100	81	57	67	67	33	48	52
- Statistical theory and methods	11	100	82	91	92	82	36	36	55
- Applied statistics	15	100	80	80	33	33	67	73	73
- Economics	3	100	100	100	33	33	100	100	100
- Economic geography	4	100	100	-	-	-	75	50	75
- Business accounting	7	100	86	100	-	-	-	-	-
- Communication skills	10	100	-	-	100	100	-	-	-
- Computer science	5	100	80	100	100	100	40	40	100
- Practicals	3	100	100	67	-	-	-	-	-
- Field project	1	100	100	100	100	100	100	100	100
- Sociology*	-	-	-	-	-	-	-	-	-
- English	4	100	75	25	25	25	25	50	50
- French	4	100	100	-	-	-	100	100	75
- Commercial law	3	100	-	-	-	-	-	-	100
- Physical education (sports)*	-	-	-	-	-	-	-	-	-

* Details on topics for these subjects were not available

Subject	Number and percentage of topics listed		Coverage of topics (%)						
	Number	%	ECA guide syllabus	EASTC	Univ. of Botswana	National Univ. of Lesotho (NUL)	ENSEA	ISPEA	ENEA
Diploma level									
- Mathematics	20	100	85	60	15	-	45	65	-
- Statistical theory and methods	13	100	92	77	69	77	69	69	-
- Applied statistics	20	100	85	90	20	20	30	45	-
- Economics	3	100	100	100	-	-	100	100	-
- Economic geography	6	100	100	-	-	-	100	100	-
- Business accounting	8	100	88	-	-	-	88	75	-
- Commercial law	4	100	100	**	-	-	-	-	-
- Computer science	12	100	83	-	50	50	25	25	-
- Practicals	4	100	75	100	-	-	-	-	-
- Field project	1	100	100	100	100	100	-	100	-
- Sociology	9	100	-	-	-	-	-	-	-
- English	4	100	75	-	-	-	-	75	-
- French	8	100	100	-	-	-	100	100	-
- Physical education (sports)	1	100	-	-	-	-	100	100	-

** Subject is taught but no examinations are conducted; details of topics not available.

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IMPACT OF THE GUIDE SYLLABUS FOR TRAINING AT STPA CENTRES, OTHER TRAINING CENTRES AND STATISTICAL OFFICES

GUIDE SYLLABUS FOR IN-SERVICE STATISTICAL TRAINING

C O N T E N T S

		Paragraphs
I.	Introduction	1 - 4
II.	The guide syllabus for in-service statistical training ..	5 - 9
III.	In-service statistical training programme in African countries	10 - 25
IV.	The utilisation of the guide syllabus	26 - 30
V.	Conclusion	31 - 32

I. Introduction

1. The paper is written with the purpose of discussing the impact of the guide syllabus for in-service statistical training prepared by the ECA Statistics Division, in the formulation or implementation of in-service statistical training programmes in National Statistical Offices of the African countries.

2. It should be noted that:

(a) The guide syllabus was approved at the third meeting of Directors of STPA centres which took place in October/November 1983.

(b) There has not been sufficient time between the approval of the guide syllabus by the meeting of Directors and the time of preparation of this paper to allow countries to use the guide syllabus to its full advantage.

(c) Only a few countries in the anglophone African countries have implemented the in-service training programme following the guidelines discussed at the third meeting of Directors of STPA centres. None of the francophone countries have implemented the programme using any of the guidelines discussed at the third meeting of Directors of STPA centres.

(d) There was need to have full consultations with the countries which have implemented the programme in order to assess the impact of the guide syllabus in the improvement or implementation of the teaching programmes, but it was considered by the secretariat to be too early to conduct such consultations.

3. This being the case, it was decided by the secretariat to discuss the utilisation so far made of the guide syllabus and the possible utilisation of the guide syllabus in National Statistical Offices and other relevant institutions. The following topics are discussed in the paper:

(a) The guide syllabus for in-service statistical training.

(b) The in-service statistical training programme at National Statistical Offices of African countries.

(c) The utilization of the guide syllabus in the organisation of courses at National Statistical Offices and relevant institutions.

4. It is the hope that after a few more countries have used the guide syllabus in the implementation of their in-service statistical training programmes, the secretariat will be in a better position to discuss the impact of the guide syllabus in the implementation of in-service training programmes at National Statistical Offices.

II. The guide syllabus for in-service statistical training

5. The guide syllabus for in-service statistical training was prepared at the request of African National Statistical Offices which had asked for guidance on the organisation and content of in-service training programmes for middle level statistical personnel in their countries. It could be recalled that the main objective of in-service training is to improve the work performance of serving middle level personnel.

6. The first draft of the guide syllabus was prepared by ECA during 1982 and was based on in-service training courses offered by African National Statistical Offices. This was one way of ensuring that the guide syllabus reflected the needs and practices of National Statistical Offices.

7. The draft guide syllabus was circulated to all National Statistical Offices in Africa, United Nations statistical experts attached to countries, the United Nations Statistical Office, Statistics Divisions of relevant specialised agencies and bilateral organizations, the Institute of Statisticians and the Chairman of the Task Force on Tertiary and Technical Education in Statistics of the International Statistical Institute. Comments received were used to develop the guide syllabus which was presented to the Biennium meeting of Directors of STPA centres held in Addis Ababa from 31 October to 4 November 1983.

8. The guide syllabus for Portuguese-speaking African countries was prepared by a Portuguese consultant during 1984. The guide syllabus was prepared to suit the countries of the group and to be adapted by individual countries in the implementation of in-service statistical training.

9. Details on the in-service statistical training guide syllabus can be obtained from document E/ECA/STPA/DM3/12 presented at the third meeting of Directors of STPA centres. The guide syllabus for Portuguese-speaking African countries is available as a separate document.

III. The in-service statistical training programme in African countries

10. It may be recalled that at the second and third sessions of the Joint Conference of African Planners, Statisticians and Demographers and the third meeting of Directors of STPA centres, the question of middle level training for statistical personnel was emphasized. It was stressed that the existing training centres should be maintained and developed and that countries should gradually set up permanent structures for in-service training inorder to meet their needs for an increasing number of statistical personnel. It may also be recalled that at the third meeting of Directors of STPA centres, there had been extensive discussions on practical ways of encouraging African National Statistical Offices to implement the recommendations on in-service statistical training.

(a) Missions to African countries

11. Missions on in-service statistical training were undertaken by staff of the STPA project and those of the Statistics Division, ECA to selected African countries during 1984 and 1985. The missions had the following objectives:

(i) Reviewing the current status of in-service statistical training programmes;

(ii) Discussing plans for improvement or introduction of in-service statistical training programmes;

(iii) Discussing possible assistance which ECA can provide within the framework of STPA.

12. Missions to the African countries and the dates of the missions are given below:

Year	Country	Date of mission
1984	Ghana	June 28 - July 10
	Liberia	October 20 - October 26
	Zambia	October 31 - November 7
	Zimbabwe	November 7 - November 14
	Mauritania	November 15 - November 21
	Mali	November 22 - November 30
	Niger	December 1 - December 5
1985	Sierra Leone	February 4 - February 11
	Gambia	February 11 - February 16
	Nigeria	February 16 - February 23
	Mozambique	March 5 - March 16
	Central African Rep.	March 19 - March 30
	Gabon	March 30 - April 8
	Congo	April 8 - April 14
	Uganda	May 7 - May 16
	Rwanda	June 7 - June 19

It should be mentioned that all the missions to countries were undertaken to the National Statistical Offices. The mission to Mozambique was undertaken with the purpose of advising the government on the implementation of in-service statistical training and also drawing up a project document for the establishment of a statistical training unit within the National Statistical Office. The assistance to Mozambique is part of the special assistance to the Portuguese-speaking African countries within STPA which the project has been providing.

(b) In-service training: ad-hoc versus continuous (formal) training

13. It can be argued that ad hoc in-service statistical training programmes have been conducted by the majority of African National Statistical Offices, since these offices were established. The continuous (formal) in-service training programmes are a new development to most National Statistical Offices. The ad hoc in-service training courses are usually conducted inorder to satisfy specific objectives i.e. conduct of a census or a survey, and are usually of a seminar or workshop type. The continuous (formal) in-service training courses conducted in National Statistical Offices aim at upgrading the skills of the participants to the level of a certificate in statistics as provided by the STPA training centres.

14. Countries which have implemented in-service statistical training programmes as discussed at the third meeting of Directors of STPA centres, the type of training course followed, date the training programme started and the present status of the

training programme are detailed below:

Country	Type of training course	Date training course started	Present status of training programme
Ghana	Beginning 1984 sandwich course	1960's	Discontinued around 1966; to be re-started 1984
Nigeria	Formal (full-time)	1962	Continuing
Zambia	Formal (full-time)	1975	Continuing
Mauritius	Part-time, few hrs. per week	1977	Ended 1980
Liberia	Daily part-time	1980	Expected to continue when University re-opens
Zimbabwe	Daily part-time	1982	Continuing
Tanzania	Daily part-time	1982	Continuing

15 Four types of in-service training courses have been described in the guide syllabus for in-service statistical training (document E/ECA/STPA/DM3/12 of the third meeting of Directors of STPA centres). The type of courses are (i) daily, part-time, sandwich, formal and daily release. The daily release type of course is likely to be adopted by Gambia while the daily part-time course by Sierra Leone in their implementation of in-service training programmes. This information was obtained during the missions to the countries which were undertaken by the secretariat during early 1985.

(c) Institutional arrangements for the training courses

16. There are several options which have been chosen by National Statistical Offices. The options are as follows:

(i) A training school with separate premises from the National Statistical Office. The school will have full-time teachers who are employees of the National Statistical Office, one of the teachers will be the principal of the school. This school will be located within a short or a long distance from the National Statistical Office depending on availability of space in the vicinity of the office.

(ii) A training school with premises at the National Statistical Office. The majority of the professional staff of the office will have part-time teaching duties at the school while a few designated officers will be assigned full-time to the school.

(iii) A training school organised in collaboration with a nearby institution i.e. college of administration, a university etc. The college or university will normally conduct its own courses and the statistics courses would be taught jointly by staff of the college or university with the National Statistical Office staff teaching the majority of the practical courses.

(iv) A training section would normally be established in the National Statistical Office with full-time staff. The head of the training section would in general be a statistician and would report to the Director of the National Statistical Office or the Deputy Director on all matters relating to the training school.

(v) The certificates for success at each level of the course are in general provided by the government and only in cases where an institution i.e. college or university is handling the programme in collaboration with the National Statistical Office will the certificates be issued by that college or university. The recommendation that by special arrangement with STPA centres, the certificate could be that of a centre is yet to be seen to be operational. None of the countries which have implemented the in-service training programme have a working arrangement of this nature in terms of certificate of success in the course(s).

(d) Incentives provided to trainees

17. It will be recalled that the main objective of in-service training is to improve the work performance of serving middle level personnel. However as indicated in document E/ECA/STPA/DM3/3 of the third meeting of Directors of STPA centres, if this objective is not linked to career development with well defined promotion outlets most in-service schemes fail to achieve their primary objective due to the general apathy of the trainees. It should be mentioned that in a number of African countries especially those of French expression, salaries are closely linked to qualifications.

18. The missions which visited the African countries during 1984 and 1985 observed the following practices which are adopted by the countries, as incentives for the trainees, who undertake courses on in-service training conducted by the National Statistical Office.

(i) Certificates obtained through the training courses are taken into account during promotion exercises.

(ii) When considering training abroad, the performance of the candidates in the in-service training programme is taken into account.

(iii) The training courses are incorporated into the scheme of service of the National Statistical Office and success at each level leads to the promotion of the individual.

(iv) A salary advancement is provided following success in the training course.

(v) The trainee is given more responsibility over other junior staff following success in the training course.

(e) Arrangement of courses

19. There are three stages which have been adopted by the countries in the training courses. These stages are all covered in the guide syllabus for in-service statistical training. The stages are as follows: (i) preliminary, (ii) stage one and (iii) stage two.

20. The preliminary stage is generally meant for those who reached the "O" level standard but have no passes in English (or French) and mathematics or for those below the "O" level standard. This stage of the course is sometimes referred to as a remedial stage before proceeding to stage one of the course. In some countries even those who have "O" levels in mathematics and English (or French) but fail the entrance examination to stage one, have to pass through the preliminary (remedial) stage. This is also true of candidates with no recent "O" levels.

21. Stage one is generally meant for those who have recent "O" levels with passes in mathematics and English (or French). In those countries where an entrance examination is administered, they must pass the entrance examination in addition to the "O" level passes in English (or French) and mathematics.

22. Once the trainee has entered the preliminary stage and performed successfully he or she would normally proceed to stage one on the basis of end of stage examination. The same applies for progression from stage one to stage two.

(f) Trainers and course materials

23. The choice of trainers for the in-service training programme conducted at the National Statistical Office should be considered carefully. Most of those appointed as trainers have the academic knowledge of the subject but may not have the skills to do the teaching. In a few statistical offices those with previous training as teachers in schools have been recruited to join the statistical office with the intention of utilising them to teach in the in-service training programme. The training of trainers may be a solution to the problem but ways and means of training the trainers have to be found.

24. The course materials for the trainers also need to be considered carefully. In a few African countries, these are prepared by either experts or consultants who come to the country and prepare materials suited to the local conditions. STPA centres could play a role in this area of course materials. Most of the trainers are either unable to prepare their own materials or do not have the time to prepare these materials. Originally ECA intended to develop these materials but due to budgetary constraints, ECA is unable to do so.

(g) In-service training: French-speaking African countries

25. In the French-speaking African countries, as explained in paragraph 2(c) of this paper, the in-service training programme as discussed at the third meeting of Directors of STPA centres, has not been implemented. The countries have implemented middle level training at National level. The certificate and diploma courses are covered in this programme. The courses are conducted either at the National Statistical Office or a specially chosen centre in the country. The establishment of links

between the STPA centres and the middle level training centres is yet to be developed. During the 1984/85 missions which were undertaken to the French-speaking African countries, information on the dates the programme started or is supposed to start in each of the countries was obtained and is as follows:

Country	Date middle level training started	Date middle level training supposed to start
Niger	October 1984	-
Central African Republic	-	October 1985
Rwanda	October 1983	-
Congo	October 1983	-
Gabon	-	October 1985
Mali	-	October 1985
Mauritania	-	October 1985

IV. The utilisation of the guide syllabus

26. There are two types of guide syllabuses for in-service statistical training which have been developed. These are the guide syllabus for the English- and French-speaking African countries and the guide syllabus for Portuguese-speaking African countries In describing the utilization of the guide syllabus, it is necessary to distinguish between the current users and potential users of the guide syllabus. These are as follows:

(a) National Statistical Offices conducting in-service training courses.

(b) National Statistical Offices intending to conduct in-service training courses.

(c) Others: STPA centres, bilateral and multilateral agencies, individuals etc.

27. The National Statistical Offices currently conducting in-service training courses intend to utilise the guide syllabus in the following areas:

(a) Improvement or modification of their course contents which were formulated before or after the guide syllabus was prepared.

(b) Adaptation of parts of the guide syllabus which may not exist in the syllabus of the course.

28. The National Statistical Offices intending to conduct in-service training courses are likely to utilise the guide syllabus in the following areas:

(a) Adaptation of the guide syllabus to suit the requirement of training programme in the country.

(b) Planning the training course in such a way that the level reached by the trainees is that of a certificate in statistics as offered by STPA centres offering middle level training. In this case, the guide syllabus will become very useful.

29. Other users: STPA centres, bilateral and multilateral agencies and individuals. A description of the way the guide syllabus is likely to be utilised is as follows:

(a) STPA centres are likely to utilise the guide syllabus in the implementation of any collaborative arrangement which may exist between a National Statistical Office and the centre in terms of in-service training programme.

(b) The Bilateral and multilateral agencies are likely to utilise the guide syllabus as a model in mounting in-service statistical training programmes in African countries.

(c) Individuals are likely to utilise the guide syllabus when requested to advise or recruited as consultants in the planning or conduct of in-service statistical training at national level. The preparation of course materials or manuals for teaching in the in-service training courses will be greatly facilitated by the guide syllabus.

30. With regard to the guide syllabus for Portuguese-speaking African countries, it should be mentioned that Mozambique is planning to use the guide syllabus in the implementation of its in-service training beginning early 1985. Also a consultant has been recruited by ECA, beginning May 1985, to assist two Portuguese-speaking African countries in the implementation of their in-service statistical training. The countries are Sao Tome and Principe and Guinea Bissau. In these two countries the guide syllabus prepared for the Portuguese-speaking African countries will be adapted to the conditions of the countries.

V. Conclusion

31. The guide syllabus for in-service statistical training was prepared to assist National Statistical Offices in the implementation of in-service statistical training courses. Modifications are expected to be made to the syllabus by the countries to suit local conditions. It is hoped that the performance of the middle level supporting staff at national level would be greatly improved through the in-service training programmes.

32. The meeting of Directors of STPA centres is invited to advise on:

(a) The assistance to National Statistical Offices in adapting the in-service training guide syllabus to suit their local conditions.

(b) The involvement of STPA centres in the implementation of courses conducted at National Statistical Offices.

(c) How to reward those who successfully complete the in-service statistical training programme.